Five Anthropomorphic Figurines of the Upper Paleolithic – Communication Through Body Language

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Abstract: *The attitude and posture of living bodies provide important clues about intended actions and emotional status. The ability to read these physical signs is part of our neuronal hardware: activated mirror neurons (Rizzolatti and Craighero 2004) enable us to read our conspecifics' intensions and emotions. This universal ability to 'read' one another is crucial to any social exchange and communication. We interact through the establishment of common ground (Tomasello 2008). All known anthropomorphic figurines from the Upper Paleolithic display certain postures: they have body language. Being works of art, we respond to them in an emotional way much as if they were alive (Gell 1998). The present paper proposes a method of breaking down the figurines' body language into discernible basic units by using the traditional practice of the performing arts. Professional actors 'understand' a character on multiple levels by consciously reproducing the basic attitude, the body language, of that character. During the course of a year in 2010, ten professional actors and a dancer/choreographer were asked to slip into the attitude of five outstanding anthropomorphic figurines of the Upper Paleolithic and consciously reflect and reproduce their emotional impact. A reference group of four Vietnamese students participated in the same experiment in Hanoi in 2011. The nationality of this reference group was deliberately chosen to provide information from different cultural backgrounds. In a first step the body language of each figurine was copied. The instant effect of the specific posture on the frame of mind was examined in a second step. Standard elements of body language were recognized in a surprisingly consistent way for each respective figurine. While results for the figurines from the Aurignacian showed many parallels with existing disciplinary interpretations, e.g., of the '*Kraft und Aggression' *hypothesis of Hahn (1986), the Gravettian figurines, known as the 'Venuses', represented by the Venus of Willendorf, gave diametrically opposed results to academic consensus. The paper presented here is a summary of the author's master thesis accepted and completed at the Department of Prehistory, Friedrich-Alexander University, Erlangen-Nürnberg in 2012.*
Keywords: *Upper Paleolithic, art, anthropomorphic figurines, communication, body language, performing arts*

Fünf anthropomorphe Figurinen aus dem Jungpaläolithikum – Kommunikation durch Körpersprache

Zusammenfassung: Menschliche Kommunikation funktioniert simultan auf mehreren Ebenen. Eine davon, unsere biologisch älteste, ist die Körpersprache. Die Fähigkeit, körpersprachliche Signale zu lesen, ist Teil unserer biologischen Hardware: Während wir kommunizieren, feuert ein Netzwerk von Spiegelneuronen in unmittelbarer Nachbarschaft des motorischen Cortex in unseren Frontallappen (Rizzolatti und Craighero 2004; Bauer 2005). Es ist die Basis der Empathie, Einfühlung, unser *common ground* (Tomasello 2008), welche Kommunikation erst erfolgreich werden lässt. Alle anthropomorphen Figurinen des Jungpaläolithikums zeigen ebenfalls bestimmte Haltungen: Es sind Wesen mit Körpersprache. Abgesehen davon, dass es sich um Kunstwerke handelt, verursacht ihr Anblick eine emotionale Reaktion, als wären sie lebendig (Gell 1998). Die vorliegende Arbeit schlägt eine Methode vor, die körpersprachlichen Inhalte dieser Figuren zu lesen, indem sie sich der Techniken professionellen Schauspiels bedient. Schauspieler vermögen einen „Charakter" auf emotionaler und mentaler Ebene zu erfassen, indem sie sich bewusst der Körpersprache dieses Charakters bedienen. Imitation, die älteste und stärkste Form empathischen Verstehens, wird vom Schauspieler reflexiv eingesetzt, um eine Figur von „innen heraus" zu begreifen. Ein Teil unserer Körpersprache ist kulturell determiniert, daneben aber gibt es bestimmte Grundbausteine, die als universale Zeichen durch Gefühlsübertragung funktionieren.

2010 wurde dieses Experiment begonnen. zehn professionelle Schauspieler und ein Choreograph/Tänzer erklärten sich jeweils einzeln bereit, in diese Figuren zu schlüpfen. Die vier anthropomorphen Figuren des Aurignacien, bekannt als Löwenmensch, Adorant, Fanny von Stratzing, und ‚Venus' vom Hohle Fels sowie die Willendorferin als Vertreterin der gravettienzeitlichen Venusfiguren, wurden ihnen als Bildvorlagen ohne weitere Informationen vorgelegt. Wichtige Aspekte der jeweiligen Positionen wurden kurz besprochen, dann nahm der Teilnehmer die Position der Figur ein. Nach ein paar Sekunden empathischer Konzentration beantwortete jeder Teilnehmer fünf grundlegende Fragen zum Charakter. 2011 konnte dieses Experiment mit einer Gruppe vietnamesischer Studenten in Hanoi wiederholt werden, um Informationen mit unterschiedlichem kulturellem Hintergrund zu erhalten. Die Ergebnisse lieferten eine Fülle neuer Einsichten, wobei die unabhängig gegebenen Antworten erstaunlich konform gingen. Die Ergebnisse für die Figurinen des Aurignacien zeigten im Großen Übereinstimmungen mit der Interpretation Hahns (1986) von „Kraft und Aggression". Ihre emotionalen Inhalte bewegten sich in einem energievollen, dynamischen, positiv konnotierten Spektrum, während die Willendorferin, völlig entgegen der allgemeinen Fachmeinung als Fertilitäts- oder Matriarchats-Symbol, Reaktionen hervorrief, die durchweg im dunkleren Teil des Gefühlsspektrums bei Trauer, Angst, Verschlossenheit, angesiedelt sind. Die vorliegende Arbeit ist eine Zusammenfassung der Magisterarbeit, die 2012 im Institut für Ur-und Frühgeschichte der Friedrich-Alexander-Universität, Erlangen-Nürnberg, abgeschlossen wurde.
Schlagwörter: Jungpaläolithikum, Kunst, anthropomorphe Figurinen, Kommunikation, Körpersprache, darstellende Künste

Introduction

The appearance of the first anthropomorphic figurines at the beginning of the Upper Paleolithic is seen as a hallmark of cultural development hitherto unknown in hominin evolution. The late hominins underwent a unique development to biocultural beings (Gibson 1996; Tomasello 1999, 2008; Richerson and Boyd 2001; Hublin 2008), with modern *Homo sapiens* as the probable author of the Upper Paleolithic works of art (Hahn 1986; Mithen 1996; Holdermann et al. 2001; Bailey and Hublin 2005; Conard 2006, 2008; Hublin 2008; Bolus 2009).

The transition from Middle to Upper Paleolithic at approximately 40,000 BP coincides with the appearance of modern humans in Europe, a region of the Old World which had hitherto been inhabited by Neandertals as the sole European hominin group (Hublin 2010). How, whether directly or indirectly, the appearance of modern *Homo sapiens* led to the eventual demise of the Neandertals is still a matter of debate. It can be argued that modern humans have an inordinate capacity for modifying their environment through cultural inventions (Laland and O'Brien 2010). This niche-construction capacity has fundamental consequences for the ecology of the respective region and for every species inhabiting the initial ecological system. Some of the consequences may imply the extinction of one or more species through destruction of their basis of subsistence. The overturning and restructuring of the old ecological niche, and subsequent establishment of the new one is rendered possible by a set of behavioral traits subsumed under behavioral modernity (Mellars 1991; Mithen 1996; Conard 2006). One trait among this set labelled behavioral modernity is the ability to create symbolic and art artifacts. While the ability for symboling (e. g., the usage of natural ornaments such as beads, geometrically incised ochre pieces or incised bone fragments) and nonfigurative art goes as far back as ca. 80,000-60,000 BP at South African sites within a Middle Stone Age context (McBrearty and Brooks 2000; Henshilwood 2004; Henshilwood and Marean 2006; Zilhão 2007), figurative art, that is art *sensu stricto*, postdates the arrival of *Homo sapiens* in Central Europe at ca. 40,000 BP. The oldest zoomorphic and anthropomorphic, three dimensional figurines all come from one area: The caves of the Lone and Ach Valleys in

the Swabian Jura (Holdermann et al. 2001; Floss 2007; Conard 2008, 2009a; Bolus 2009). In addition, the Stratzing site near Krems in Lower Austria yielded one more figurine of the same age, namely the presumably female silhouette of the Galgenberg Venus, nicknamed 'Fanny the Dancer' (Neugebauer-Maresch 1989, 1995).

Scholars look on these oldest works of art as the demarcation lines of modern abstract thinking (Bolus 2009; Wynn et al. 2009). While this statement meets with general acceptance, the interpretation of the meaning and use of the figurines invites discussion. These usually small and often fragmented figurines interest specialists and the general public alike. They bear a symbolic message and their makers are instantly perceived as vaguely yet intriguingly familiar, rather than seen as remote biological entities of purely evolutionary interest.

How can we examine the instant emotional response elicited by these figurines in a rational, scientifically successful way? Ethnological comparison with recent hunter-gatherer cultures (Lévi-Straus 1962) has delivered some fragments of understanding, but in general the results stop at some reference to 'ritual' or 'Shamanism' (Clottes and Lewis-Williams 1998) or 'unknown myths' (Hansen 2007). Still, all ritual contains the human factor of communication. Communication lies at the very core of culture (Tomasello 1999, 2008). Perhaps a shift in the point of view may be helpful. Figurative works of art elicit this intense 'interest' because at some emotional level they are perceived as living beings rather than dead objects (Gell 1998; van Eck 2010). Building on this idea, what appropriate method of deciphering the meaning of these figurines may be successfully applied to clear the path? The author will suggest a method of investigation into the meaning of these figurines that stems from the field of performing arts. The central focus of the dramatic arts is life experience and the state of mind of a man or woman, expressing itself through the body. Everything we do also reflects our human state of mind.

The aim of this paper is to propose and lay out a valid empirical method of breaking down information contained in artifacts depicting human bodies. It also aims to demonstrate that artistic and scientific approaches are compatible and may unite in a potent tool for better understanding our past.

The Figurines and their Time – Preparatory Thoughts for Setting up the Investigation

In the following section, we will briefly introduce the objects of our investigation and sketch out their respective epochs, before moving on to the main scientific theories which form the mental basis for setting up our experiment. The figurines considered here are the four oldest known anthropomorphic figurines of the Aurignacian of Central Europe (Hahn 1970, 1977, 1986; Neugebauer-Maresch 1989, 1990, 1995, 2008; Conard and Bolus 2003; Antl-Weiser 2008a, b; Bolus 2009; Conard, 2009a, b; Floss 2010), their ages ranging from 40,000 to 30,000 years. They have all become celebrities in their own rights and not only for prehistorians: the 'Venus' of Hohle Fels, 40,000-36,000 years old; the 'Adorant' of Geißenklösterle, 34,000 years old; the 'Lionman' of Hohlenstein-Stadel, 32,000 years old; and 'Fanny the Dancer' from Stratzing/Krems-Rehberg, Lower Austria, probably 32,000 years old. On the other hand, there is the no less famous group of the

Gravettian 'Venuses' or 'Fat Ladies' represented here through the Venus of Willendorf from Willendorf/Lower Austria, approximately 28,000-27,0000 years old.

The zoomorphic figurines of the Swabian Jura sites (Floss 2007; Conard 2009c) have been excluded from this investigation, because animal body language is different from human body language. We read animal behavior by different cognitive means than that of our own conspecifics (see also Rizzolatti and Craighero 2004). The methods applied here would be inadequate for their interpretation. As for the Gravettian figurines under scrutiny, namely the so-called 'Fat Ladies', the most famous of them all – the Venus of Willendorf – will figure as *pars pro toto* for the almost 200 other 'Venuses' of the statuette horizon ranging from 28,000-22,000 BP and comprising a vast area from the west of France to the Russian Plains. They all display a standardized body language with varying arm positions for the figurines from the Russian sites of Kostenki and Avdeevo as well as the Pavlovian figurines in Central Europe (Gvozdover 1989; Röder et al. 1996/²2001; Svoboda 2006). Otherwise they have a very similar or identical body posture. The fat Venus figurines (as opposed to some slim specimens, e.g., see Wolf 2009) of Western and Central Europe especially can be grouped together by their posture. Besides the Gravettian fat Venuses, there is a series of other figurines of the Gravettian, which, interesting as they are (for a critique see Kunz 1996/²2001, 200-204) have also been omitted. A detailed analysis of more than 200 figurines would surpass the extent of the present paper.

The Aurignacian, the epoch of our first four figurines, is a particularly difficult cultural time period to evaluate. It is not a monolithic culture and its origins and chronology remain a matter of debate (Hahn 1977; Zilhão and d'Errico 1999; Bolus 2004; Teyssandier 2005; Zilhão et al. 2006; Churchill and Smith 2007; Henry-Gambier 2007; Otte 2008; Bailey et al. 2009; Hublin 2010). The Aurignacian shows a considerable diversity in its assemblages (Hahn 1977; Straus 2003; Teyssandier 2005; Bolus 2009, 92), and definitions of what should be identified as an Aurignacian assemblage, in particular concerning the early stages of the Aurignacian and its distinction from other Upper Paleolithic complexes, remains imprecise or problematic (Kuhn et al. 2004; Teyssandier 2005, 14; Zilhão et al. 2006). Adding to the general debate is the scant European fossil evidence on modern humans, which has even been diminished recently (Henry-Gambier 2002, 2007; Trinkaus and Zilhão 2003; Wild et al. 2005; Trinkaus et al. 2006; Hoffmann et al. 2011). On the other hand, new comprehensive studies comparing remains of European provenance (Hublin 2010) and dental remains (Bailey et al. 2009) clearly associate modern human fossils with Aurignacian sites.

The uncalibrated radiocarbon dating of the Aurignacian complexes shows younger ages for Western Europe than for Central or Eastern Europe: in France and Italy, the Aurignacian appears at 36,500 BP (Zilhao and d'Errico 1999; Higham et al. 2009). In Central Europe, uncalibrated dates from the sites of the Swabian Jura vary between 40,000 and 30,000 BP (Conard and Bolus 2003), and the Aurignacian layers at Stratzing produced dates between 32,000 and 29,000 BP (Neugebauer-Maresch 2008). The chronologically important site of Geißenklösterle has been recently re-evaluated through calibrated radiocarbon dating with ultrafiltration (Higham et al. 2012). The newly presented results show a previous underestimation of the real age of the Aurignacian at Geißenklösterle. According to the new dates, the Aurignacian at that site started around 42,500 cal BP. Today, archaeology classifies the Aurignacian into three phases on the

basis of the diagnostic lithic industry: A.) The Proto-Aurignacian or Fumanian (ca. 40,000/37,000-34,000 BP), with geographical dominance in the North Mediterranean to Lower Austria (Bolus 2009, 92); B.) The Early Aurignacian (43,000-31,000 BP) in Central Europe, France and Italy; for some scholars Proto-Aurignacian and early Aurignacian are contemporaneous (Bolus 2009); and C.) The Late Aurignacian ranges from approx. 31,000 to 28,000 BP in Central Europe. In general, Aurignacian sites are dominated by features that have been subsumed under the expression of 'cultural modernity' (Mellars 1991; Conard 2006; Bolus 2009, 93; Depaepe 2009, 116).

What characterizes the Aurignacian apart from its lithic industries was the general introduction of new organic material, bone and ivory (Peyrony 1934; Sonneville-Bordes 1960; Hahn 1977, 1986, 1988; Bolus 2009, 93). Additionally, the craftsmanship in working this new material very quickly reached a high level of sophistication. Not only projectiles for hunting were fashioned out of bone. The makers of the Aurignacian used bone and ivory for artifacts that belong to fields of interests other than subsistence strategies. Apart from pierced shells and animal teeth, items of personal adornment like pendants and beads were made of this new and flexible material. But above all, it was used for the figurines of the Swabian Jura.

In 1934, Gustav Riek published the results of his excavation in Vogelherd Cave, where in 1931 the first ten figurines were found. 'Mobile art' as these little figurines are properly termed, has been turning up ever since, the last spectacular find being the 'Venus' of Hohle Fels Cave in 2008 (Conard 2009a, b). Deeply impressed but equally puzzled as to the meaning of the little zoomorphic figurines, Riek interpreted the artifacts as tokens of hunting magic. He created a romantic image of the Aurignacian people as formidable hunters gallantly inclined towards the female sex: "*Als Hauptinhalte des Aurignacien-Kunstschaffens hätten wir demnach Wild und Weib. (...) Die Jägermacht triumphierte in der Kunst*" (Riek 1934, 296-297). Riek was probably the first to take into account that the ivory figurines may have had prototypes of perishable material. Sketches of the figurines in clay or mud may have been made as studies before carving in ivory (Riek 1934, 298). The high artistic quality of the figurines invites such deductions. In 1986 Hahn drew the same conclusions (Hahn 1986, 205). Since 1997 excavations at the sites of the Swabian Jura have continued under the direction of Nicholas Conard. In 2005 they were resumed at Vogelherd and in 2008 at Hohlenstein-Stadel under C.-J. Kind. Four caves have yielded art objects: Vogelherd, Hohlenstein-Stadel, Geißenklösterle, and Hohle Fels. An impressive collection of over 50 figurines is known so far (Floss 2010). The figurines' association with the Aurignacian is uncontested today (Hahn 1986; Floss 2007, 304; Bolus 2009, 93; Conard 2009a, b).

The Gravettian, on the other hand, the cultural horizon of the 'Venuses' at approximately 28,000-22,000 BP, appears more distinctively homogenous both in artifactual heritage and social traces, e.g., similar burial rites (Duarte et al. 1999; Antl-Weiser 2008a, b; Händel et al. 2008), spatial organization of sites (Gvozdover 1995; Svoboda 2006) and hunting strategies (Steguweit 2008, 39). The Gravettian, following the Aurignacian as a cultural complex, is sometimes nicknamed the 'Age of the Mammoth Hunters' with time ranges between 30,000 and 28,000 BP for Willendorf and Dolní Věstonice to 24,000-21,000 BP for Kostenki and 23,000-21,000 BP for Abri Pataud (Gvozdover 1989, 32; Delporte 1993; Svoboda 2006).

As the climate during the mid Upper Paleolithic improved (Djindjian et al. 1999), the Gravettian hunters showed greater mobility, with materials being transported over considerable distances, and personal ornaments like shell beads found with greater frequency (Moreau 2009, 97). One of the significant innovations of the Gravettian includes spacious sites or base camps with organized activity areas (Svoboda 2006, 52; Moreau et al. 2009, 121). Regional cultural differentiation within the Gravettian – like the Pavlovian of Central Europe or the cultural unity of east central and eastern Europe, the Kostenki I,1-Avdeevo-Willendorf-culture – can be observed, where the sites are periodically inhabited. As another example, the site of Dolní Věstonice (Moravia) is quite spacious, but archaeologists are not sure whether the camp space was inhabited all at once or partially over a period of time (Svoboda 2006). Mammoth ivory, antler and bone become frequently used materials (Moreau 2009, 98). Heaps of bones in living space areas can be observed. Rich, ochre-strewn graves, sometimes inside the camps, and secondary burials document elaborate burial rites, for example the spectacular twin burial of Krems-Wachtberg (Händel et al. 2008, 102) and the equally famous triple burial of Dolní Věstonice (Klíma 1987). Standardized, serial production of blades (Moreau 2009) round out the picture of a firmly installed cultural modernity. Also, the acceleration of artifactual innovations (the 'ratchet effect'; see below) becomes visible (Depaepe 2009, 116). The 'statuette horizon', or the area where our 'Fat Ladies' are found, is a 3,000 km long corridor that stretches from southwestern France to the longitude around Moscow (Moreau 2009, 96).

One point should be mentioned: The Gravettian 'Fat Ladies' seem to follow a canonized form. Hitherto, that had mainly been a common feature of tool production, whereas the Aurignacian anthropomorphic figurines were all shaped individually. Personal adornments like shell beads, etc., might also have followed some canonized form along the lines of social indicators (Henshilwood 2004; Henshilwood and Marean 2006; Zilhão 2007), but here the shapes were already naturally defined and only imbued with meaning. With the Gravettian, the following cultural epoch, canonization stretches into art production.

The Danube Corridor

During the 'Big Transition' between Marine Isotopic Stages (MIS) 5 to 3, the Danube provided a transversal corridor for Paleolithic hunter-gatherers from east to west and vice versa, between the glaciers of Scandinavia that covered most of Europe, and the Alpine glaciers. It connects preferable settlement zones between France and Moravia (Uthmeier 2000, 136). The geographically and climatologically advantageous Danube Corridor, which has been used as a European main artery well into historical times, gave rise to the *Kulturpumpe* model advanced by Conard et al. in 1999 (Conard and Bolus 2003). The baseline of the cultural pump model "postulates that the upper Danube including the Swabian Jura is a key area of cultural innovation during the early Upper Paleolithic" (Conard and Bolus 2003, 364). Where the present topic is concerned, it is supportive to our arguments that the sites of the Swabian Jura yielded the oldest work of art *sensu stricto* as well as some of the oldest musical instruments (Conard and Malina 2009). Why the cultural innovations 'stuck' so well during the Upper Paleolithic in Europe has been discussed as partially dependent on demographic and geographic factors: a successful

'ratchet effect' (Tomasello 1999) can be maintained more easily by a larger group and/or by groups with permanently established links where 'smart' innovations may travel or be transmitted faster and with a higher probability than in small, isolated groups. On top of that, the frequency of innovations within a smaller group is lower than within a larger group (Diamond 1997). This is where the above-mentioned 'ratchet effect' comes into play: One of the most important modes of human cultural transmission is cumulative cultural evolution (Tomasello 1999, 5) through communication. Human cultural achievements, whether artifacts or social practices, were presumably never invented in all their complexity by one individual or a group of individuals. They were developed over time. Starting from the prototype, repeated modifications added by others improved the artifact or practice as the situation called for it. This process is called the 'ratchet effect' (Tomasello 1999, 5). In contrast to all other animal species, humans are able to "pool their cognitive resources" (Tomasello 1999, 5) and fix important cultural innovations to prevent their loss in later generations. While the ratchet effect takes place on a personally interactive level, the super structure, the culture, will inevitably be changed at some point as well.

Watching, as it were, the succession of Upper Paleolithic cultural complexes, what we may see at work here is a phenomenon which has been recently described in evolutionary biology as the niche-constructing capacity of certain species, including humans. The baseline of niche construction theory (NCT) is that modern humans have an inordinate capacity for modifying their environment through cultural inventions, thus creating our own ecological niche (Laland and O'Brien 2010, 308). In a feedback loop, selective forces established within the ecological niche act on the niche-constructing species as well. The difference between standard evolutionary theory and NCT consists in the incorporation of the idea that the niche-constructing species co-causes and co-directs their own evolution and that of other species as well (Laland and O'Brien 2010, 304). The fairly new concept of NCT is quite compelling as it takes into account our 'double nature' as biocultural beings. The importance of culture as an equal partner to biological inheritance in human evolution has been formulated in the dual inheritance theory (Richerson and Boyd 2001), which is closely linked to NCT. The dual inheritance model describes the unique form of cultural organization among the human species. One is the biological inheritance that is coded and transmitted through the genome (of both parents); the other is the social or cultural inheritance that is transmitted through cultural tradition. Richard Dawkins's meme theory (Dawkins 1976) is in some ways similar to the dual inheritance theory.

In their essay "Culture is Part of Human Biology" Richerson and Boyd (2001, 2) formulate two main points on the evolutional importance of culture:

1. Culture is fundamental to understanding human behavior.
2. Culture causes behavior by causing changes in our biology.

In short, culture is as much an integral part of our nature as is our biology. The "principle of natural origins" (Richerson and Boyd 2001, 7) favors the idea that the learning capacities of our large and highly expensive brains (Aiello and Wheeler 1995; Hublin 2008) are as much a result of natural selection as the rest of our genetic equipment. An integral part of our cognitive equipment is cultural learning, the vehicle of it being communication skills. Communication skills comprise, apart from the use of spoken language, body language and the use of representational art or symbols.

Looking at the emergence of modern humans in Europe, the challenge faced by the invaders could probably be described as an arctic environment at MIS 3 in combination with a habitat that was very probably already occupied by another hominin group, the Neandertals. It is speculative to consider why they faced the challenge. However, they had obviously developed the capacity to counteract the difficulties through a special set of behavioral traits that enabled them to respond in a flexible way to their environment. These behavioral traits interacting with each other are subsumed as cultural modernity (Mellars 1991). Among a diverse and innovative material legacy it includes the first appearance of a very special type of artifact – namely figurative art – heralding a shift to a 'biocultural' makeup. There is also another key feature in the behavioral set of cultural modernity: acceleration of technological change. For Europe at least, the acceleration did not only occur in technological change for improving subsistence strategies, but also in artistic production. Artistic expression gathers momentum from the emergence of the first figurines to the awesome cave paintings and the artistic ornamentation of other artifacts – hunting weapons in particular, such as the elaborate spear-throwers of the Magdalenian (e.g., Mas d'Azil). In less than 20,000 years, the full range of artistic expression has been established. One of the determining faculties of the niche construction capacity is our communicative ability. This ability has become more of an imperative need in the course of cultural evolution. A human being who is excluded from communication with other humans is likely to develop serious mental and somatic disorders (Bauer 2005, 105-106). Why are we so dependent on socializing with our conspecifics? Our sophisticated communication system may be at the root of this imperative need.

The biological basis of human communication - the mirror neuron system (MNS)

Our survival as individuals and as a species depends on understanding the action of our conspecifics. The extraordinarily complex human communication system has evolved on a biological basis: "Unlike most species, we are able to learn by imitation, and this faculty is at the basis of human culture" (Rizzolatti and Craighero 2004, 169).

This uniquely human capacity of learning by imitation is one of the properties of a fairly recently discovered neural system of mirror neurons (MN). Mirror neurons are a particular class of visuomotor neurons (Rizzolatti and Craighero 2004, 169) first described in experiments with macaques in 1992 by di Pellegrino and in 1996 by Gallese et al. and also Rizzolatti. The mirror neuron system transforms visual information into knowledge (Rizzolatti and Craighero 2004, 172). There is also a congruence between the visual action and the motor stimuli or, to put it another way: it does not matter whether I do it or I watch someone do it: the mirror neuron circuits fire (Rizzolatti and Craighero 2004; Bauer 2005, 23-25; Ramachandran 2010).

In humans, not only the premotor cortex but also the motor cortex is active while performing or observing an action. There have been studies with TMS (transcranial magnetic stimulation) to this result. When humans observe an action or movement, the observer's corresponding muscles are activated as well. This activation is measurable as an increase in the electric potential in muscles. It is most interesting that the human MNS is activated even when the observed movement is meaningless, likewise when the action is mimicked (Rizzolatti and Craighero 2004, 176).

These results can help us understand why we are so finely tuned to the emotional state of people around us. We cannot help subconsciously reacting to muscle tension, facial expression and posture whether the other wants to communicate his feelings or not (Watzlawick et al. 1982). The results also imply that even strange unfamiliar gestures elicit an instant emotional response. Actions of conspecifics trigger a motor resonance, whereas actions of other species that do not fall within our motor repertoire (e.g., the barking of a dog), are registered and recognized on a visual (or auditory) basis but without the internal motor involvement that is so characteristic of human-human communicational situations. Observation of conspecifics "translates the visual experience into an internal knowledge" (Merleau-Ponty 1962, after Rizzolatti and Craighero 2004, 179). It is also interesting that in humans there is a tendency to repeat observed actions that match one's own personal motor repertoire; the closer the match, the greater the temptation. It has been shown experimentally that MNS responds strongest to goal-oriented imitations. In the latter case, Broca's area, responsible for our linguistic properties, is additionally activated (Rizzolatti and Craighero 2004). In the light of interpreting Upper Paleolithic figurative art as symbolic representations of empathic actions, this last point is significant.

By way of summary, it can be said that human MNS is the neural basis of communication events. Actions and their locomotive elements, or gestures (= body language), become comprehensible messages between individuals. Body language is our most basic communication system. The earliest acquisition of communicative skills takes place in early childhood (Bauer 2005) through imitation. Through empathic observation and close imitation of the social teacher and role model (parent, sibling, etc.), the human child acquires the key to any social interaction (Tomasello1999; Richerson and Boyd 2001, 6). Also, close imitation is a key requisite to the ratchet effect. Only what is faithfully preserved can be handed down through tradition. Imitation is the most basic and most effective communication skill. It is extremely helpful towards developing deeper understanding, and approaching the motives and procedures of others' actions, especially when the other is a stranger. Actors proceed in very much the same way on a more sophisticated level. The difference between actor and child is the very acute awareness how the new movements change the emotional and conscious state (Feldenkrais 1967; Pisk 1975; Čechov 1990). Humans apply their imitative skill in all areas of activity. Imitative learning from others is encountered in any daily routine, in social intercourse but also in rituals. Looking at rites, rituals or ritualised actions, the most general apparent feature is that any ritual is strictly choreographed.

The performing arts offer a variety of methods for establishing multi-level communication (Watzlawick et al. 1982). In particular those that deal with artistic expression cannot possibly answer with yes or no – there is no such objective. The context – and with it the point of view – is always a determining factor. The figurines frustrate any attempt to pin down their meaning in terms of a precise reference. As these artifacts that have been created by that complex system called human imagination, the traditional scientific approach of detached analysis may, after all, be the wrong one. If the figurines are viewed as anthropomorphic systems themselves in analogy to human beings (Gell 1998), their attitude becomes legible. Their gestures show an emotional state that can be met with empathic understanding. We took Gell's suggestions literally and set up an experimental situation where the figurines were treated like interesting strangers. We imitated their posture in order to understand what is going on inside.

The results may allow a few steps further down the line towards understanding the statements made by the 'oldest intentional works of art' of our species.

The Method

In this section the experimental setup will be laid out; we will then direct our focus to each figurine in turn, concluding with an abstract of the investigational results. Ten professional German actors and one Australian dancer and choreographer were approached by the author. Professional actors are familiar with the use of physical gestures and can consciously reflect and reproduce their emotional impact. They were filmed during the process of stepping into character, and basic questions concerning emotional and environmental perception were asked. As a reference group from a different cultural background, four young Vietnamese students were asked to participate in an identical procedure in Hanoi, spring 2011. All contributions are documented on film.

Setting up the Investigation

Two questions need to be addressed first:

1. How can I be sure to read correctly the emotion(s) that the artisans of the figurines wanted to transport?
2. How can I deal with emotion in a descriptive way?

Emotions have no precisely defined boundaries; they are 'fuzzy' and merge into each other. The best way to deal with this challenge is to allow for groupings or sets of familiar emotions. We postulate that most of the time we think we have many emotions because every living minute is accompanied by some kind of feeling. As an actor, the author knows that most of the many emotional states can be 'built' by a combination of four basic emotions, which in their intense forms have been compared to the Aristotelian 'Four Elements', 'Humours' or 'Temperaments': Anger – Joy (Love) – Grief – Fear.

All professional actors are familiar with this basic emotional character set and their respective physical manifestations. The reproduction of the basic demeanour (a nightly requisite of every theatre actor, which depends on the situation about to be played on stage) may be attained through certain techniques. For the issue presented here the technique of the psychological gesture is appropriate. Actually a very old technique, it was termed psychological gesture by the Russian actor Michail A. Čechov (1990) in 1946. The principle is quite simple: specific gestures evoke associated specific emotion(s). There is of course a wide motor spectrum covering one emotion, but it can be said that gesture and emotion cannot be linked at random. Given the appropriate situational context, making a fist will make every one angry; collapsing on the ground will not produce feelings of elation.

With the Upper Paleolithic figurines, the only information we still have is the gesture. The situative context provided by the cultural meaning is lost. We postulate that, taken as primary gestures, the body language of the figurines will tell us the underlying basic emotion(s). Our body language shows influences of culture and gender, but its basis is a set of culture/age/gender-independent universal elements. The investigation focusses on some of these universal elements.

Just before starting the experiment, the goal was explained in short terms. The stress was laid on spontaneous and simple answers. No further interpretation should be made in terms of cultural or moral assessment. During communication with the participants, familiar technical acting terms were used. Beforehand, the common definitions were discussed briefly in order to minimise sources of misunderstanding.

The Question of Gender

The instant essential basics that are registered between communicational parties are (a) age and (b) sex. We draw a lot of behavioral information from the simple fact of the counterpart being male or female. Unfortunately there is no other field that is more culturally determined by society than the question of gender role, which is groomed from infancy. In order to obtain the least opinionated response, all participants were asked to ignore the figurine's gender, but simply to go on by their own body feeling. They were also asked to ignore the level of maturity of each figurine.

The first part of the investigation took place at the Staatstheater Nürnberg, Germany, either within the theatre itself, or on its rehearsal stages. In Germany, all participants were professional actors and/or dancers, colleagues of the author or resident guests. The interrogation was led by the author. All contributions were filmed from beginning to end. The filming took place from April 2010 to November 2010. In February 2011, a second experimental setup was arranged in Hanoi, Vietnam, led by Mrs. Beverly Blankenship, who is a professional theatre director. The participants in Hanoi were four students of performing arts, who communicated through a translator during class. The set up took place in a rehearsal room provided by the Goethe Institute, Hanoi. All relevant material was electronically sent by the author. During the preparation of the material, care was taken to show neutral posture sketches to the participants where neither gender nor age could be determined. No interpretative information at all was given to the participants. The participants were all asked to appear in private, leisure clothing in familiar rehearsal rooms.

First step: The participant was shown five pictures, one for each figurine. For each picture, important aspects of posture were briefly discussed: the positioning of limbs, torso and head; arms and legs, hands and feet were discussed separately. Attention was drawn to whether the figure's stance was straight or slightly bent to one side, front or back, how the head was held. Suggestions for the possible muscle tonus of each figure were exchanged or whether differences between the body parts could be discerned. Each participant could choose the most convenient order of figurines.

Second step: The participant was asked to take his or her respective posture and step into character and the recording began. After a few seconds of adjustment and another few seconds to let the impulses surface, the most basic question was asked: extrovert or introvert? The answers were all prompt. After a short while, the majority of participants volunteered their impressions of the character. The main aim was to instigate spontaneous, easy answers, as a way of getting the most authentic responses. During the filming, the pictures were laid out nearby to facilitate checking the posture.

A set of five questions were defined to help formulate the emotional responses:

1. Extrovert or introvert? The basic extrovert/introvert question is a matter of directing one's attention. The more sophisticated meanings are neglected here: extrovert = focus on the outside; introvert = attention directed towards the inner self.
2. Status? This question is slightly more complicated. There is a high status (king), a low one (slave) and a whole range in between. Social status and self-esteem are not necessarily identical or synchronous. The most important aspect is the physical 'feel', not the social aspect, which is rather culturally defined.
3. Connection with environment? Apart from the attention directed towards the environment, how is the emotional bond or relationship between individual and surroundings? That is very much a question of senses, eyes, ears, skin, taste even, in case the figurine also has a mouth. How is the environment's 'feel'? Welcoming, threatening, wide, small, landscape, closed space, etc.
4. Possibilities of communication with (a) partner(s)? The sensation of having one or more communicational – not necessarily human! – partners may emerge. How is the figurine's readiness and proposed mode of communication or interaction with one or more partners? How is the other's attitude perceived?
5. Emotional complex? The inner emotional response while employing the posture or gestural action. Is it a positive or negative overall feeling? Is there a mix of emotions? If affirmed, is the mix made of ambiguous or harmonizing emotions?

The questions were posed in order of complexity. Nevertheless, during investigation the order was not rigidly observed. If the participant offered the answer spontaneously to one of the questions, the answer was acknowledged naturally and the test continued smoothly. The primary interest was focussed on the uninhibited, authentic, emotional reaction to the figurine. Professional actors and performing artists are familiar with these questions as they form the basic perceptional network of any character's judgement of self and environment.

The Adorant – Geißenklösterle (Fig. 1)

In 1974 Joachim Hahn started excavations at Geißenklösterle, taking up Riek's work of 1963. Geißenklösterle Cave is situated in the valley of the river Ach in the middle section of the Swabian Jura near the city of Blaubeuren. The west-facing cave entrance lies 60 m above the modern valley level (Hahn 1986, 31). It is a well-known cave locally, and thus was not exactly in pristine condition for archaeologists. During the late 1980s a series of radiocarbon dates were published for Geißenklösterle and Vogelherd. Geißenklösterle layer IIb yielded ages between 33,000 and 30,000 BP. It was there that the anthropomorphic figurine 'Adorant' was found in a widespread bone-ash area. According to Hahn (1986, 36), a workshop and an area with pebbles that may have served as cooking stones could be identified. Why a bone-ash layer was spread over most of the middle part of the floor remains an unsolved riddle. Although it had been an inhabited place, no hearth could be safely identified (Hahn 1986, 36). The overlying layer IIa had no bone ash and was dated to 31,000-30,000 BP (Hahn 1986, 206).

The figurine 'Adorant'

The whole surface of the figurine has been damaged; the relief had been singed at the corners and showed traces of ochre and manganese (Hahn 1986, 36). Only small areas of the arms and shoulders are preserved. On the arms there are six horizontal lines. The longish extension between the legs may be a tail, a piece of some kind of material, or a penis (Hahn 1994, 101). There is another, rather unpleasant option, that the extension may be a stake, or, more comfortably, a kind of stool.

The posture

The figurine in half relief, made of mammoth ivory, is standing erect with legs apart, soles on the ground. The knees are bent, the torso is straight, the head seems to be turned to the side. The arms are raised to shoulder height and slightly bent at the elbows. The figurine stands slightly asymmetrically. It is not discernible whether the asymmetry is deliberate, meant to be a perspective rendering, or simple chance. The whole half relief is small; it fits well into the palm of a hand (length: 3.8 cm; height: 1.4 cm; width: 0.45 cm). The sides and back of the half relief are covered with signs: 13 grooves on each of the side rims of the thin ivory plate, seven on the upper rim, six on the lower rim, adding again to the number 13. The back of the plate is covered with four rows of 13 dots. Looking closely at the dots, the two inner rows are accurately picked while the outer rows seem to be quickly made, the dents being less round, less accurate.

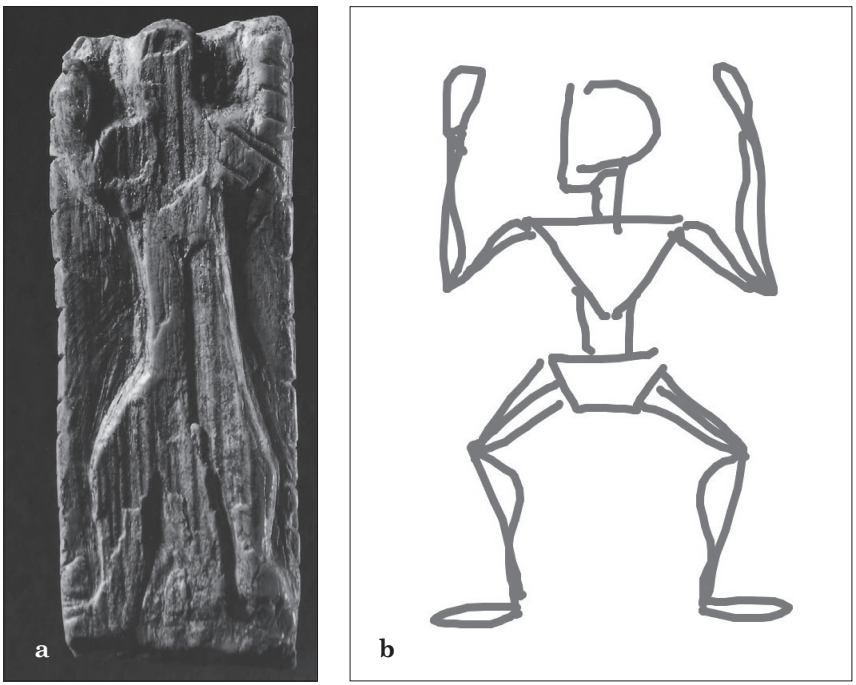

Fig. 1: *Geißenklösterle: the 'Adorant'. a the original (photo: Landesmuseum Württemberg, Stuttgart); b posture sketch.*

Summary of the actors' comments

This figurine was perceived as deliberately ambivalent in its intentions with a tendency towards extrovert. The gesture was described as expansive, highly dynamic with high muscle tension. The presence of one or more imaginary counterparts was felt. Various status levels from high to low were offered, with several actors suggesting ambivalent or context-dependant status. This figurine displays an extremely open posture, which strongly influences breathing. Interpretation of the posture is massively context-dependent, from menacing or defensive to adoration. The male Vietnamese students felt very strong and powerful in this stance, the female students were a bit bewildered.

Discours: Geometric signs on the figurines

The abstract signs on the Aurignacian figurines have always been looked at as a special kind of puzzle: some researchers interpret them as astronomic-seasonal calculations (Marshack 1976), others detect the Upper Paleolithic man's horror vacui (Riek 1934; Oliva 2008). They may represent personal or hunting markers (Riek 1934; Conkey 1987) or body paint (Müller-Beck 2001 with respect to the Lionman). In any case, all figurines of the Swabian Jura are covered with geometric marks. Porr (2004) connects the patterns with a kind of trance and Floss (2007, 305) underlines the features of mobility, their individuality and a possible close relationship to their bearers (Floss 2007, 309; Porr 2010, 97). Traces of wear document that many of the figurines were used as pendants. With respect to the Adorant, Rücklin (1995) discusses a kind of lunar calendar in relation to the female fertility cycle. The topic of female fertility is a *Leitmotiv* in explanation models concerning Upper Paleolithic figurative art. The author would like to express the opinion that while the subject matter of fertility most probably played a dominant role during the Neolithic (Gimbutas 1989), we doubt whether the same applies to the Upper Paleolithic (see also Hansen 2007, 11-13). The Paleolithic hunter-gatherers depended on the acquisition of food. The Neolithic age is determined by the fundamentally different subsistence strategy of producing food. The most important abilities needed to meet the respective strategic demands are very different. It has become a matter of common knowledge that nobody is exempt from tendencies to view phenomena from his or her contemporary point of view. Ours is inherited from the Neolithic: a sedentary lifestyle depending on perpetual growth favors concepts that evolve around growth, fertility, production and growing quantities. A mobile lifestyle may very well favor different concepts. We propose strength, stamina, orientation.

Recently, the neurosciences have contributed towards a deeper understanding of the beginnings of symbolic behavior. The preoccupation of cutting marks into bone or stone is quite old, as easily documented by the 350,000-year-old Bilzingsleben rib (for a critique see Steguweit 2003) or the 75,000-year-old ochre engravings of Blombos Cave (Henshilwood 2004). There is a kind of pervading satisfaction in viewing 'purified' geometric patterns. They present a familiar stimulus to the visual cortex because these patterns simulate how the brain reconstructs form (Hodgson 2006, 56). We propose that repetitive visual patterns are reminiscent of analogous audio patterns, that is, rhythm. As living beings we are pervaded by our own rhythms: heart beat, blood flow, breathing, etc. Hearing rhythms and rhythmic movement are well known to heighten positive emotions even to the point of ecstasy. While the author does not believe that the patterns

on the animals were in any way musical notations, the link between audio and visual patterns might have functioned on an associative basis, much in accordance with the shamanistic approach (Porr 2004, after Floss 2007). The recovered bone flutes (Conard 2009d; Conard and Malina 2009; Münzel and Conard 2009) as the oldest musical instruments provide another associative hint.

The Lionman – Hohlenstein-Stadel

The history of the discovery and rediscovery of the famous Lionman reads like an adventure. During the last days of excavation season 1939, some 200 pieces of worked mammoth ivory (Hahn 1970, 1) were found at the back of the cave Stadel at a depth of 1-1.20 m near a deposit of mammoth tusks (Hahn 1970, 2; Wehrberger 1994a, 41) in the Hohlenstein massif. Together with a small ivory bead and an almost complete polisher (Hahn 1970, 5), the fragments were stored in a cardboard box as part of the Robert Wetzel collection. In October 1969, Joachim Hahn from the Department of Prehistory at the University of Tübingen discovered the cardboard box from 1939 with its contents, and together with two colleagues, Gerd Albrecht and Hartwig Löhr, pieced together most of the figurine. Lumps of earth were stuck to the fragments that were partly coloured red by the sediment of the Aurignacian layer of the Stadel, and so facilitated the identification of the figurine as being Aurignacian. Later on, two ^{14}C-dates on animal bones close to the figurine's find spot gave further proof: 31,750 +1150/-650 and 32,000 ±550 BP give an approximate age of 32,000 BP for the Lionman (Wehrberger 1994a, 44). In 2008, excavations at the Hohlenstein-Stadel were taken up again by C.-J. Kind. In 2011 two pieces from the back of the figurine were found in the debris heap left over from the last excavation. With the added pieces the figurine is now more than 30 cm high.

The posture (Fig. 2)

Wehrberger (1994a, 39) gives a detailed description of the Lionman's posture. There is one point where the author contests Wehrberger (1994a, 39). We perceive the remaining left upper extremity as a heavily muscled human arm, not the back legs of a feline (see also Hahn 1970, 8; Bosinski 1982, 14), slightly bent at the elbow and with all muscles tensed. The frontal muscles of the shoulders in particular seem tensed and bulging outward. In this position, the shoulder joint is turned up and forward, accentuating the bulge. Shoulder muscles in this tension will almost automatically bend the elbows and transmit further tension downwards to the muscles of the lower arms, wrists and hands.

An active triceps also accentuates the dorsal part of the elbow joint. Unfortunately, parts of the surface of the lower arm are missing, so that the correct shape is more felt than seen; if the reconstructed posture of the arms is correct, the palms at the *Ligatum radiocarpeum palmare* touch the hips at the point where the outer lip of the *os illium* is tangible. This arm position would harmoniously combine the ventral concave curvature of the torso, the straight head and the tiptoe, set apart legs. The knees are not completely straight, and the balls of the feet raise the body up. It is exactly the stance seen before jumping. It is also the pre-tension position of gymnasts (pers. comm. Ksch. Jochen Kuhl, a former olympic gymnast).

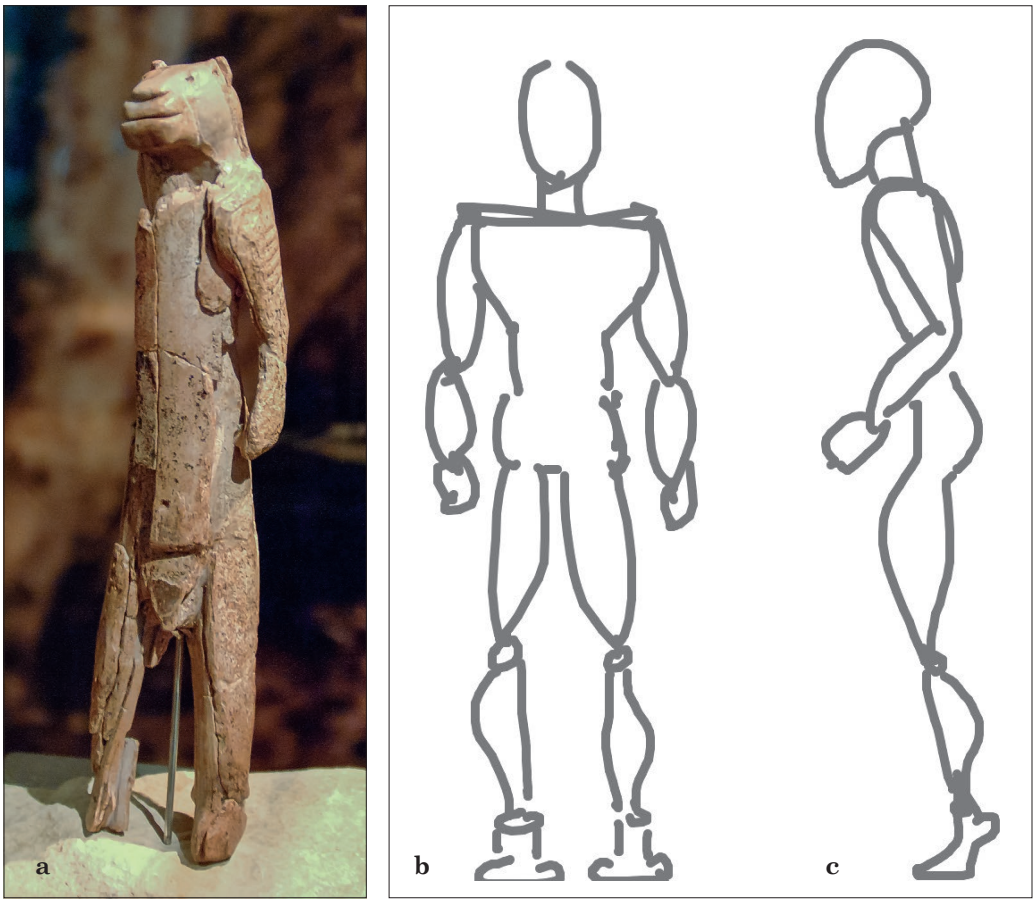

Fig. 2: *Hohlenstein-Stadel: the Lionman. a the original, old reconstruction (photo: Ulmer Museum); b, c posture sketches.*

Summary of actors' comments

In contrast to Hahn's (1986, 195) interpretation as a static posture, the Lionman evoked the feeling of high muscular tension about to erupt into intense dynamic action. The high muscle tonus was observed throughout. The Lionman radiated physical power that may be interpreted as aggressive or a dance-like, dynamic focus with a will or readiness for communication with others. An intention to seize something or reach out towards an imaginative goal was sometimes detected. The status was generally assumed to be high, with well-developed self-esteem. Some participants remarked that "he wants something" (Richter-Haaser) or "he is a pace-setter, striding forward" (Jochen Kuhl), "pretended to be what he still wasn't" (Thomas Klenk). The focus is directed outward into the environment, with very alert open senses. The Vietnamese students thought him strong and alert as well. As an additional facet, they also detected loneliness in him.

Discours: The making of...

To our point of view, the process of making these figurines is an integral part of the figurines' meaning. Here, 'meaning' does not only refer to the metaphysical or symboling qualities of the figurines. They are carved from ivory, a time consuming process that requires craftsmanship. This fact may carry some information as to the position of the figurines within the material culture of the Aurignacian. The conference of 2005 in Aurignac (France) 'Les chemins de l'art aurignacien' (Floss and Rouquerol 2007) prompted scientific and craftsman-like interest in re-creating the Lionman with original tools. In a remarkable experiment, the archaeotechnician Wulf Hein attempted to retrace the steps of the artisan who had once carved one of the most spectacular figurines of the Upper Paleolithic. Hein (pers. comm. Hein 2011) used recent ivory from Sudan. A total of 321 working hours were needed to carve the figure, which represents a considerable amount of time. If that is compared to the 35 working hours for the little horse found at Vogelherd Cave (Hein 2008, 58), the difference is even more impressive. Hein had been unable to produce planing chips of ivory using authentic tools, although these chips had been noticed at several sites (Hein and Wehrberger 2010). It is appropriate to assume that the Aurignacian artisans had developed sophisticated and timesaving methods that are no longer reproducible; but the experiment shows that carving the Lionman was a special process. From this, it can be deduced that the Lionman was with all likelihood a prestigious artifact of some importance. All figurines required great diligence in their making, especially the details of eyes, mouth, etc. The zoomorphic figurines of the caves Vogelherd, Geißenklösterle, and Hohle Fels measure between 3 cm and 9 cm. The artisans who carved them must have had fine motor. We might speculate that the Lionman represents perhaps a first masterpiece of traditionally acquired skills that had been developed with the smaller figurines. Craftsmanship is always accumulated through cultural learning with a ratchet effect (Tomasello 1999). The ratchet effect also encourages a dynamic spreading of these 'artistic memes' (Dawkins 2006). The caves of the Swabian Jura perhaps represent a first visible cluster of 'artistic workshops' at around 30,000 BP.

A Female Figurine from Krems-Stratzing/Lower Austria: Fanny the Dancer

The site of Stratzing has been known since the 1950s. In 1985, construction work cut into two cultural layers that reached down to 4 m (Neugebauer-Maresch 1995, 189) at the 374 m Galgenberg (Gallow's Hill). In September 1988, excavators uncovered a fireplace with numerous stone artifacts. The figurine was found in the southern part of a well-defined area (5 m × 2 m, 30 cm thick) with many artifacts. The northwestern part was dominated by a hearth 1 m in diameter and banked by stones. Five little post holes were also found in the area – probably a tent was set up near a hearth. The fifth hole had been filled with lithic debris and bone fragments, perhaps a former cooking hole. The figurine had been broken into eight fragments spread over a 50-cm radius and lying face down at the very base of the 30-cm thick cultural layer. Some were covered in wood-ash (Neugebauer-Maresch 1989, 552, 2008). Smaller schist fragments are interpreted as cutting chips. Maybe the figurine broke during the working process or the carving did not meet with the satisfaction of her maker, and he/she threw the figure away. It is made of greenish, luscious schist (chloric amphibolite).

The posture (Fig. 3)

Although 'Fanny' is only a silhouette, the front and back are discernible. She is standing, but her feet were not worked separately. On her left, beneath what seems to be an armpit, there is a protrusion that is perhaps a full left breast: The pictures usually do not show *"eine stabförmige, undeutlich vom Bein abgesetzte Fortsetzung bis etwa unterhalb des Knies"* (Neugebauer-Maresch 1989, 552). The head is slightly inclined to the right, a tiny bit broader on the left side with a little backward tilt (Neugebauer-Maresch 1989, 554). Two long cut marks on the left side that come together in the abdominal area are probably slips of the tool. The figurine's proportions are suggestive of a woman (Neugebauer-Maresch 1989, 1995). A little thicker spot between her legs is not a penis but an older breakage. Two points are important: first, it is the silhouette of a woman, and second, her posture has an upward tendency. Whether the statuette relates to a religious cult (see Neugebauer-Maresch 1989, 558) is hypothetical.

The figurine is very small: 7.2 cm high, 2.7 cm broad, 0.7 cm thick; it weighs 10.8 g. Like the Adorant of Geißenklösterle, the whole figurine has ample place in the palm of the hand. For both statuettes their extremely small size could be a hint. Were they meant to be talismans? In contrast to the half relief of Geißenklösterle, the statuette of Stratzing has no carved surface. She has remained an expressive silhouette, probably left unfinished. She is standing with the left leg straight and her left arm raised above the head. During investigations, some participants proposed bending the arm at the elbow so the hand would reach behind the neck. The idea of this arm position was probably instilled by the shortness and thickness of what seems to be the left arm.

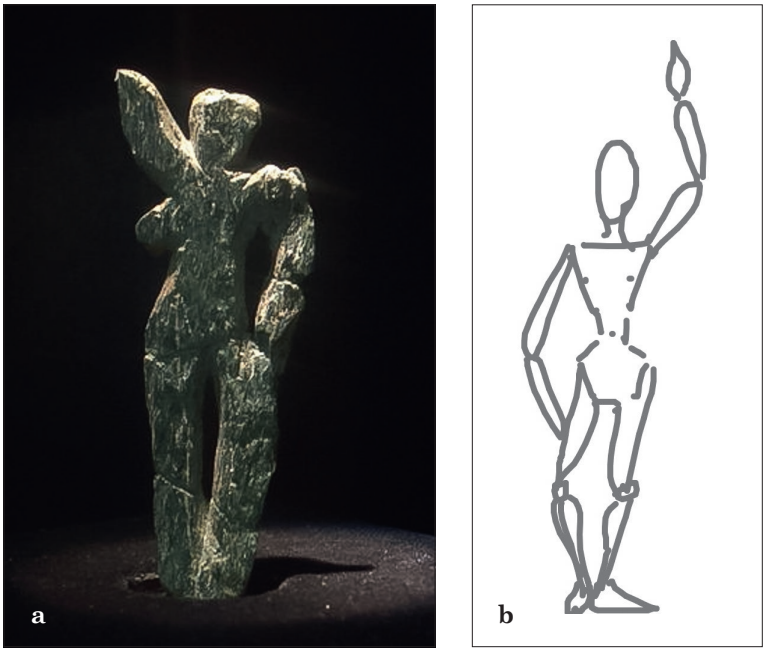

Fig. 3: *Krems-Stratzing. 'Fanny the Dancer'. a the original (photo: Natural History Museum, Vienna); b posture sketch.*

The raised left arm

The gesture of the raised arm could be an act of pointing upwards, or the arm could be raised in greeting or to hold something. Its shortness and unusual thickness (if it was meant to be an arm) suggest that it had not been finished, or a piece of the arm (elbow and lower arm) is missing.

The whole of the left side is stretched vertically. But in order for the left breast to be shown, Neugebauer-Maresch (1989) proposes that the torso had to be drawn left and upward with a twist to the left. For that kind of movement, all spinal column muscles, the ventral lateral muscles and shoulder deltoids, must work. There is considerable tension throughout the body in this kind of position. The twist of the upper body happens when the shoulder with the arm is drawn back to throw or reach for something. The right side antagonizes this movement. The antagonistic arm usually points in the direction of the aim. Does the right arm rest on the thigh, or is it seen in perspective? (see also Neugebauer-Maresch 1989, 558). If the silhouette of Stratzing is meant to depict a throwing movement, the perspective option would be more plausible. The aim would not be far away but in the middle or short distance.

Summary of actors' comments

This figurine was perceived as extremely extrovert, with a posture/gestural action of high expressivity. She was deemed very much inclined to engage in interaction with the environment, with open senses and a feeling of lightness. The posture evoked a feeling of great self-esteem with an erotic, seductive component, sometimes bordering on pride, vanity or offering herself. Generally the posture was reported to ease and open up breathing, thus inducing joyful, light emotions. The four Vietnamese students, too, perceived her as very extrovert and joyful.

The 'Venus' of Hohle Fels

The discovery

The female mammoth-ivory figurine , nicknamed "Frau Fröhlich", was discovered in the basal Aurignacian deposit at Hohle Fels Cave (Swabian Jura) during excavations in 2008 (Conard 2009a).

Excavators recovered six fragments in mid-September 2008. Its importance became apparent when the main piece, the torso, was found. The pieces of the figurine were buried 3 m below the current surface of the cave, about 20 m from the cave's entrance. All the finds were within one quadrant and within a 12 cm vertical dimension. Only the left arm and shoulder are missing. The close proximity of the fragments shows that the Venus "experienced little taphonomic disturbance after deposition" (Conard 2009a, 248). Five pieces were in archaeological horizon Vb, one piece was found in an area rich with charcoal directly overlying Vb. Vb is approximately 8 cm thick over sterile clays that separate the Aurignacian from the Middle Paleolithic strata. The fragments were discovered lying "next to a number of limestone blocks with dimensions of several decimeters. The find density in this part of archaeological horizon V is moderately

high with much flintknapping debris, worked bone and ivory, faunal remains of horse, reindeer, cave bear, mammoth and ibex, and burnt bone" (Conard 2009a, 249). Oxford AMS-Radiocarbon dates on bone and charcoal range between approximately 34,700 and 31,100 BP. Another series of AMS-dates with ultrafiltration on bones from the vicinity were made and yielded dates between 34,700 and 33,300 BP. Given the wide range of dating, Conard prefers an orientation towards stratigraphic context and uses the AMS dates as "rough indicators of age" (Conard 2009a, 249). As the Venus-layer is overlain by five Aurignacian layers with "intact anthropogenic features" (Conard 2009a, 249) and a total thickness of 1 m, the setting "suggests that the figurine is of an age corresponding to the start of the Aurignacian, around 40,000 calendar years ago" (Conard 2009a, 249).

The figurine

The figurine, made from mammoth ivory, is small: only 59.7 mm long, 34.6 mm in width and indeed very 'mobile'. As a pendant, however, she is quite prominent as a little experiment showed holding the figurine like a hanging pendant from a strongly built man's neck.

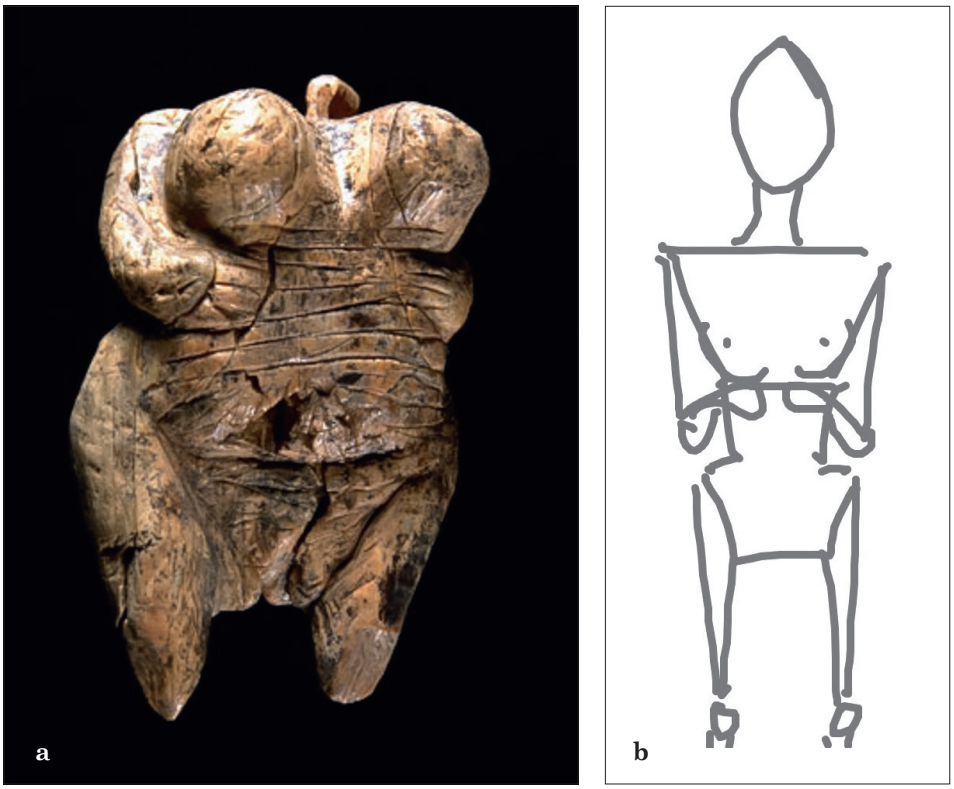

Fig. 4: *Hohle Fels. The 'Venus'. a the original (photo: H. Jensen / University of Tübingen); b posture sketch.*

The posture (Fig. 4)

The Hohle Fels 'Venus' is a straight female torso with swelling breasts that sit very high up. The shoulders are broad, the arms are on the sides and bent at the elbows. The hands are placed beneath the breasts with flat palms on the ribcage, neither supporting the breasts, nor clasping them. The fingertips do not meet over the solar plexus but frame this important neuronal network of the human physique. At first the torso gives the impression of being buxom or well fed. On closer scrutiny the impression radiates from the expanded ribcage. If looked at from the side, the upper part of her belly is strongly developed, gradually thinning towards the pelvis. The hips are broad, the legs are only indicated but the existent upper thighs suggest straight legs that are set at hip-width apart. This position displays her primary sexual organs. There is a vertical slit that runs down between her legs and up again indicating the cleavage of the buttocks. It is noteworthy that there is no natural bulge of the *gluteus maximus*. This is a bit odd compared to the strong thighs. The most apparent feature is the lack of the head and neck. Instead, a loop sits in the middle on top of the left shoulder. Like all other Aurignacian figurines, she has mainly horizontal marks covering the abdominal front and running like a belt around her back. Both breasts show two circles each running around. There are no nipples discernible but a little indentation (beside the bigger crack on the abdomen) that can be interpreted as a navel. One deeper horizontal line on the abdomen from one side to the other lends a greater plasticity to the belly. The arms are also marked with horizontal lines reminiscent of the marks on the arms of the Lionman and the Adorant. Looking down at the figurine, the lines over her breasts form a kind of X.

Summary of actors' comments

Generally this figurine evoked good, positive feelings of self-esteem and sensual femininity. Some inhibition was perceived in the arm position, a protective or self-protective component was reported. The focus was mainly perceived as directed outwards, with alert senses and an inclination for interaction with the environment. Status was generally judged to be high, with one exception; the protective component was also perceived as dominant. The reaction of the Vietnamese students was positive as well. Two of them wanted "others to take care of her".

The Gravettian Venuses – and their most famous representative: The Venus of Willendorf (Lower Austria)

General archaeological context of the Gravettian Venuses

The overwhelming majority of the figurines were found in cache-pits, intentionally laid down in a horizontal position and face down at the bottom, or in twos and threes back to back or one on top of each other, in either a primary position (Gvozdover 1989, 1995) or secondary as fill of the pit. Other small artifacts, lithics and bone artifacts and bones accompany the figurines, but Gvozdover (1995, 35) does not detect a specific association. In Gagarino (Kazaksthan), exceptionally, two figurines were also found within the dwellings. Another detail is of special interest: Most of the pit bottoms were impregnated with red ochre. Where more than one figurine is assembled, they may not have been laid down

all at once but in succession with some considerable time lapses in between (Rogachev, after Gvozdover 1995, 75). One pit in Kostenki (Russia) with the archive number KI-36 had a figurine (No. 36) with associated artifacts deposited on a bed of ochre and filled with clay. Later on it was medially dug up again, filled with artifacts once more, strewn with ochre and covered with a mammoth spatula. Then it was filled up again with mammoth bones. The planographical location of the figurine pits does not differ from other pits on the sites: "All of them are situated in the central part of the site on both sides of the hearth line" (Gvozdover 1995, 35).

The Kostenki I figurines were found under similar conditions (Gvozdover 1995). In general, investigators have observed an almost total similarity in all cultural elements for the figurines, which seem to transport the same spiritual background (Gvozdover 1989, 68). We therefore feel entitled to treat the figurines from the Russian plain as one cultural entity.

The discovery of the Willendorf Venus

Willendorf, situated near Krems a. d. Donau in Lower Austria, is close to the Danube. The site has a remarkable stratigraphy that comprises a time range of 40,000-25,000 BP (Neugebauer-Maresch 1995, 187).

There are four important Upper Paleolithic sites that cluster around the small city of Krems (Wachau): Hundssteig, Wachtberg, Stein, and Galgenberg, which lies north of Krems, partly belonging to Krems-Rehberg and partly to the community of Stratzing – the open-air site where the older Fanny was found.

The Willendorf Venus, an 11 cm high, naked female figurine of oolithic limestone was found on August 7, 1908 on site II in a layer of yellow loess, 25 cm below a charcoal substratum belonging to layer 9 not far away from a big hearth.

This particular excavation has gained a certain notoriety due to the strife between Hugo Obermaier, who had been invited to the site, the leading excavator Josef Bayer, and the Director of the Vienna Museum Josef Szombathy, who each claimed to have discovered the Willendorf Venus. In 1926 Bayer discovered a second Venus (Bayer 1930a, 48), a rather fragmented figurine in poor condition. This figurine is 23.2 cm high, missing the head, rather slender and more stylized. In his original excavation report he describes the place where she was found as a "straight pit, the bottom covered with a mammoth skull and the figurine placed on top of it" (Bayer 1930a, 48-49).

A third 'Venus of Willendorf' was recovered later that much resembled a long egg, probably an unfinished piece. She was in the same layer 9 as the famous first Willendorf Venus (Bayer 1930a, 48-54). The circumstances of these finds bear similarities to the archaeological record of the Russian Plain (see below).

The Willendorf Venus is usually described as a corpulent and mature woman (Neugebauer-Maresch 1995, 188; Kunz 1996/²2001; Antl-Weiser 2008a). She was either painted with ochre or she had been in contact with that colour because traces of ochre were found in the crevices. She is standing, although the feet are not represented. Her knees are a little bent (see also Neugebauer-Maresch 1995, 188; Antl-Weiser 2008a and 2008b, 27, fig. 9 and fig. 10 for a detailed description), and the head is bent forward with the face looking down. Her arms are pressed to the sides of her body, bent at the elbows, lower arms and hands with the stretched-out fingers rest over her voluminous breasts. The physical details are well represented including her fat hips and thighs, her knee joints and calves, the belly button, and the pubic triangle with the outer labia is quite visible. As with all other 'Venuses', the abdominal fold is prominent. Neugebauer-Maresch (1995, 188) mentions that only few people remark on the fatty folds at her back, around the regions of her arm pits and around her upper waist. Based on gynaecological and general observations these creases are only found in adipose people. Neugebauer-Maresch (1995, 188) concludes that, based on these observations, the artist depicted a realistic type of woman rather than just an artistic image endowed with excessive fat. Her concluding remarks accept the interpretation that the Willendorf Venus is a mature woman who has perhaps repeatedly born children. But Neugebauer-Maresch (1995, 188) also considers a possible pregnancy, pointing to the voluminous belly. We would like to remark that, considering the low position of the belly, the abdominal fold and the overall appearance of obesity, the big belly is quite in accordance with adipositas and less with pregnancy.

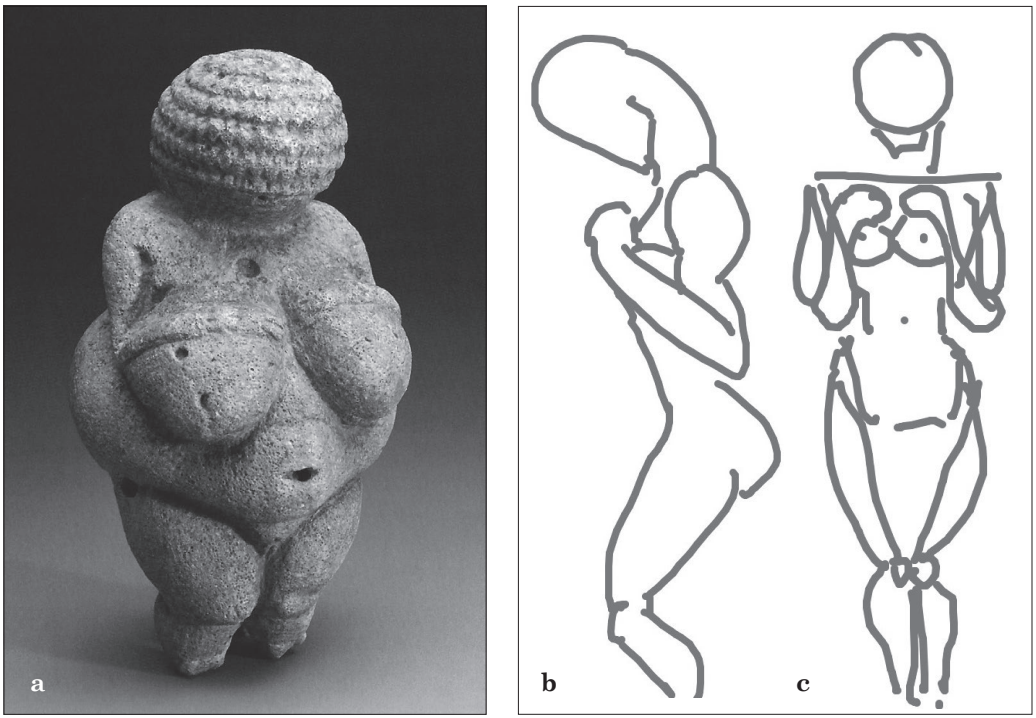

Fig. 5: *Willendorf. The Gravettian Venus. a the original (photo: Natural History Museum, Vienna); b, c posture sketches.*

The posture of the other Gravettian Venuses

The body language of all the Gravettian 'Venuses' is very similar and suggests a canonical concept. After closely studying the body language of all the famous specimens, we were able to distinguish three main groups according to details of their arm position as the obvious body language variation:

1. Group I without arms, the prominent specimens being the black Venus I of Dolní Věstonice/Moravia, (fired clay, 29,000-25,000 BP; 11.1 cm) and the Grimaldi specimens of yellow and green steatite and of red ochre (24,000-19,000 BP; 8.1-6.1 cm).
2. Group II with hanging arms pressed to the side and resting beneath the breast on the belly, examples being the Venus of Sireuil, Roc de Cazelle (Dordogne, France) (translucent calcite, 27,000 BP; 9.1 cm), some of the Avdeevo and Kostenki figurines from the Russian Plains (limestone and mammoth ivory 24,700 BP; 9.5-4.7 cm) and Mal'ta (Siberia, Russia) (mammoth ivory, 22,000 BP; 8.7 cm).
3. Group III with their arms bent and pressed to the side, hands resting above the breasts, fingers on the sternum. Here the exemplary figurines are the Willendorf Venus (Austria) (oolithic limestone with traces of red ochre, 26,000 BP; 11 cm), Lespugue/grotte du Rideau (Haute Garonne, France) (mammoth ivory covered in black pigment, 25,000 BP; 14.7 cm) and Gagarino (Ukraine) (volcanic rock 24,000 BP; 5.8 cm).

Almost all figurines have a slightly bent head. They are standing but without the 'straightness' that can be observed in the Lionman or the Hohle Fels Venus. Their legs are closed, knees coming together. Some figurines have a slightly straighter posture but most show 'soft' knees. The Avdeevo Venuses do not close their thighs completely. There is a significant movement of the lower limbs on the whole that all figurines have in common: the knees are turned inward and slightly bent. Therefore, the legs not pressed together count merely as a variation.

All figurines in this group may be called overweight, or obese. There is variation between more slender figurines like the Avdeevo type or fat ones like the Willendorf/Gagarino Venuses or the Venus of Lespugue (for a differentiation see also Gvozdover 1989)

Summary of actors' comments

The actors' response to this figure was in stark contrast to the common, positively weighted interpretation of 'fertility symbol'. The posture of this figurine evoked universally negative feelings including grief, pain, and feebleness. Communication with the environment was reported to be very inhibited, the senses were "closed", the focus of attention was inward. Almost every actor perceived the status as low or very low. The interesting exception was an actress who perceived the posture as concentrated, possibly meditative with a passively "dangerous" component. One actor also perceived a meditative component, while the other participants contested this notion. Passivity and some kind of vulnerability were universally reported. The emotions reported for this younger Gravettian figurine were diametrically different to those for the four older Aurignacian figurines – an interesting result. The position of the arms had no influence on the emotional perception of the figure. It can be said that all the Gravettian figurines in this canon have the same emotional expression. Three of the four Vietnamese students perceived her as sad. One female student gave an interesting answer: "she felt happy but she needed to go to others".

Discussion of the investigational results

Before entering the discussion it should be mentioned that great care was taken to select an equal number of male and female participants, with varying ages between 26 and 65 for the German/Australian group. The Vietnamese students were all in their early twenties. Also there was a great variety in physical fitness. One participant was pregnant in her 5th lunar month. Another participant had a heavy physique, reminiscent of the Willendorf Venus. None of these factors seem to make a difference in respect to the answers.

The Aurignacian figurines

All actors interpreted a dynamic expressiveness in the gestural canon of the Aurignacian figurines. The figurines of the Lionman, the Adorant, Fanny and the Hohle Fels Venus are all described as extrovert, full of energy. They were perceived to have open senses and an alert attentiveness towards their environment. They were described as inviting communication, displaying postures that speak of a positive self-image and self-esteem. In general, self-esteem reflects a high or positive status that has met affirmation from the social environment. The investigational results on the Lionman and the Aurignacian figurines are mainly in concordance with Joachim Hahn's interpretation of '*Kraft und Aggression'* (1986). Although the interpretations did not always include self-assurance or purely positive feelings, the underlying current of energy was perceived by all participants. In the Lionman, the proximity to (shamanistic) transformation is a recurrent theme mainly affirmed by the participants.

The Adorant was described through a wide range of feelings, like an emotional rainbow. The figure was considered to express deliberate ambivalence. Through their spontaneous reactions (which cannot be described but may be seen in a video), all actors showed agreement that the figure was meant to be an intermediary of some sort. A more precise analysis is beyond the range of this study, but the half-relief form may hint at deliberate environmental representation, the idea of which escaping us today, though it would provide a crucial context for the interpretation of the posture.

The Gravettian figurine(s)

As discussed above, the actors' response to the younger Gravettian Willendorf Venus was diametrically opposed to their reactions concerning the Aurignacian figurines' body language. Her body language was described as passive and evoking negative feelings. Her posture suggested an attitude of closed senses. The environment is either shut out or perceived as an overwhelming force. The bent head with arms on her chest and closed knees is a position that was described as demure, devout or dejected. Her attention was interpreted as directed inward, which may also suggest meditation. Her status was described as low. Despite the depiction of physical massiveness, her attitude was described as somewhat soft or weak, probably due to a perceived low muscle tonus. In contrast to a relaxed muscle tonus, a low muscle tonus is linked to negative feelings such as grief or melancholy.

As a first reaction this seems to contradict the interpretation of the figurine as a fertility symbol. Nowadays fertility is widely considered as something evocative of positive feelings. Other epochs looked on fertility in more ambiguous ways. This view does not contest the possibility that the figurine has a more sophisticated symbolic meaning beyond fertility, which escapes us in our ignorance of the original cultural context.

Adopting the figurines posture evoked strikingly similar emotional responses in the actors throughout this series of physical investigations. The very similarity may imply the deliberate purpose of storing very basic – that is easily readable – emotional information and thus readily raising empathy in the recipient.

This leads to the question of purpose: were the figurines perhaps a means of achieving some kind of 'synchronisation' for members of a group who may dwell far apart or who are unable to communicate easily because of their circumstances? The already much-discussed symbolic value of the figurines may lead to the question of whether there was some kind of urge towards maintaining communication and/or establishing affiliative bonds despite the obstacle of space or other obstacles like incompatible languages (see also Tomasello 2008 on the gestural origins of human communication: the complex system of common ground). Emotional understanding of body language is not only achieved in cultural context but has in its basic forms biological roots that allow universal understanding (Watzlawick et al. 1982; Bauer 2005) independently not only of space, but also time. Therefore, it can be claimed that we can 'read' the figurine's primary emotional messages to a certain extent. We do not know the circumstances and situations in which those figurines were used, that is, their cultural background. Unfortunately 'situation' is another crucial consideration in any attempt to fully grasp the other's message.

Interpretative Approaches

Every culture organizes relevant knowledge in categories that are plausible and organically developed out of the cultural background (Lévi-Straus 1962). Indeed, causality is so fundamental in human cognition that we construe causes and links between animate or inanimate things and events even where there is none. The pool of organized knowledge has a tendency to 'grow' a dense network interlinking all that is essential to know with respect to living within that culture, but which may seem superstitious or nonsensical from another cultural reference system. All humans structure knowledge by the same 'principle of similarities' (Lévi-Straus 1962). The impression of the non-sensical comes up when the similarities between things that are obvious with one cultural reference system are not visible from the point of view of another cultural reference system (Lévi-Straus 1962, 29). From our culturally determined point of view, the 'essence' (a biologically hard-wired knowledge of natural appearances; for a detailed discussion see Wynn et al. 2009) of fatness links to other 'essences' of things we perceive as similar. Other culturally determined points of view would not see the correspondence as we see it. Our culturally determined point links 'round' and 'female' with 'motherly' and 'nourishing'. We do not link 'round' and 'female' with 'death' and 'danger'. Here, considering the subject matter was directly induced during the investigation of the figurines' body language with the empiric disclosure of yet unnoticed features. Throughout the experiment the attitude of the Willendorf Venus was described as introvert, low, dejected, sad.

Some participants considered pain; in one case she was described as dead to her own body. Only one emotional description was positive but with the interesting reserve that 'she must make contact with people'. In the light of these results, the figurines' omitted body parts become significant. Rauer (2010) proposes a general taboo for faces in the Upper Paleolithic. The female 'facelessness' is hidden by a mask, or mask-like expression as in the 'helmeted Venus' aka 'black Venus' of Dolní Věstonice (Rauer 2010, 43). But the omissions do not stop there. The lack of feet, the atrophied, hanging and/or tied or missing arms amplify the impression of an underlying strong taboo. There are two main domains of taboo: food and death. Both domains are closely linked according to Freud (Freud 1913, cited after Rauer 2010). If viewed together with the archaeological context of cache-pits in living space areas with nearby hearths, plus parallels with Gravettian burials (red ochre, associated mammoth bones and artifacts; Bayer 1930a, b; Gvozdover 1989, 1995; Svoboda 2006; Händel et al. 2008), they point in one direction. This path of interpretation has opened up because we did not approach the figurines like any other artifact (Gvozdover 1995) but with an attitude suggested by A. Gell (1998). We agree with Gell who treats the art object as a (communicative) process rather than an inanimate form with strict boundaries.

Emotional responses function via the stimuli of the circuits of mirror neurons, elicited by meaningful action and in particular consciously imitated action (Rizzolatti and Craighero 2004; Bauer 2005). Meaningful action in social and individual contexts is stored through our figurines' body language. It can be said that the figurines store social memory. Any ritual is social memory at its root. Some parts can be reconstructed, even if the whole will remain fragmentary. Also, any ritual is a preset performance. Shamanistic rites are, at their core, as much performances as are any inaugurations, archaic mystery cults (e.g., the cult of Dionysos; Otto 1933; Detienne 1986), religious festivities or rites of passage or death rites. To use the most common expression in its original sense: It is theatre. There is more than one parallel between shamanism and drama. The main theme here and there is transformation. And there is always a moment of conjuration that relies heavily on tying together the emotional energies of all participants. It vies for every participant's undivided focus; it is a thoroughly social act, made possible only through the joint attention and joint engagement of all participants. In order to facilitate the emotional involvement with the ritual act, the participant(s) step into roles that often are invested with attributive apparel. The most powerful amongst them is the mask. The mask simultaneously designates the function within a rite and the ritual character while also providing the 'road inside'. Stepping behind the mask is a transformational act; facing the idol or ritualistic icon is a dialogue, a social act. In the course of time, masks and idols are endowed with a virtual life and with the powers and forces they were made to signify. The mask also signifies a persona. The form will vary according to varying situational and cultural influences but it will remain legible within the cultural context that gave rise to the alteration. Yet, the most signifying property will be preserved. With masks the point is clearly illustrated. The representation will retain the emotional gesture. It has a story. As long as the story is passed down through generations, the characters or dramatis personae of the story live on as well. Within the living cultural context, the mask is not absolutely necessary to recognise the persona. If the story is lost with cultural change, knowledge of the persona's 'crucial moments' will also be lost, but its basic demeanour will be kept through the mask's face. One side of the

equation, so to speak, is gone. But the emotional response(s) of the story's character(s) are frozen in the formal facial expression of the mask or, respectively, the body language conveyed through the posture.

The Lionman's face is the animal mask that hides the individual man (after Rauer 2010, 43). This 'use of mask' is a stylistic parallel between the Aurignacian and the Gravettian figurines (Floss 2010; Rauer 2010). Once more there is an omission: may be through taboo (Rauer 2010), the individual face is not shown. But this time the mask reveals more than what it hides. The animal face of the Lionman has cocked ears and a slightly open mouth like a cat in focussed attention (Wehrberger 1994b, 56). The lion head from Vogelherd (Riek 1934) shows a similar expression. Apart from the spectacular Lionman, the caves of the Swabian Jura yielded three more therianthrops. The therianthrop from Vogelherd Cave (Riek 1934), the Adorant from Geißenklösterle and a therianthrop called '*kleiner Löwenmensch'* (small Lionman) from Hohle Fels Cave, discovered in 2001 (Conard 2009c). All four figurines seem to be related. Lionman and Adorant have nearly the same body proportions (Hahn 1986; Dowson and Porr 2001) and bear horizontal marks on their arms. Both seem to have muscular shoulders, a feature that can be observed/interpreted in the small Lionman as well. All four have a very upright posture. All four have a round head reminiscent of a cat (or lion). All four have an exaggerated long torso in relation to their extremities as could also be observed in feline creatures. The lion is a universal symbol of strength and power, the 'king of animals' (Wehrberger 1994b), and this is stored as the 'essence' of lion in folk biology (Wynn et al. 2009, 77). Even if we are unable to specialize what the 'essence of lion' – lionness – is, all humans share this knowledge because it is a multi-sensory taxon within the frame of universal thought patterns that are stored in our neural makeup somewhere in the parietal cortex (see Wynn et al. 2009, 77-78). From the performer's point of view, the Lionman, the Adorant, the Vogelherd therianthrop, and the small Lionman are aspects of one persona. We propose there is a shared story between them. This seems quite probable if outward appearance and discernible body language of these four figurines are viewed together. A basic mytheme can be reconstructed. The bodies of all four figurines have high muscle tension, the movements are quite dynamic (Lionman and Adorant) and extrovert – that is, interactive with its environment (Adorant and Lionman). Moreover, to judge from their outward apparel, or 'mask' as it were, the persona is a mix between human and animal. So, the fundamental plot of the story, the mytheme, is transformation. Here again, the performer has an utterly different approach to the philosopher: Masks are not for hiding, not in the first place, at least. Masks are the 'material conjuration' of another spiritual power. To conjure it means to confront it, not to hide. Of course, once you stress one feature, you neglect another, but that does not annihilate it. It remains there, in the shadow of the mask. To conclude, it is possible that the four feline-human therianthrops of the Swabian Jura share a story that, in turn, is shared by the Upper Paleolithic artisans with us on the base of ('folk biological'; see Wynn et al. 2009) common ground (Tomasello 2008).

The archaeological context is very fragmentary, but combined with the results of the 'making of...'-experiment, it can be assumed that the Lionman was a prestigious figurine signifying a persona of charisma or importance. The figurine of the Adorant is difficult to interpret in his ambiguity of body language, but if the relationship Lionman – Adorant presents an assumption of higher probability, some more valuable information may be extracted from the formal reconstruction of a background story out of the archaeological context.

On the female figurines

Conard (2009a, b) associates the Venus of Hohle Fels Cave with the Gravettian female figurines in general and the 'archetypal' Willendorf Venus (Conard 2009a, 250), in particular as an image of fertility: "Although there is a long history of debate over the meaning of Palaeolithic Venuses, their clearly depicted sexual attributes suggest that they are a direct or indirect expression of fertility" (Conard 2009a, 251).

We propose to differentiate between the Gravettian 'Venuses' and the Aurignacian figurine of Hohle Fels Cave on the grounds of their very different body language. The Hohle Fels figurine displays a stance suggestive of sexual encounter and – maybe in consequence – fertility. Her very high, swelling breasts with the hands placed underneath compose a gesture halfway between offering herself and self-confident enjoyment. The chest is quite prominent, as if expanded by air-filled lungs; the shoulders are broad or squared, giving the impression of a deep breath drawn in shortly before release. The high muscle tonus, the expanded chest and the slightly tensed abdominal muscle group induces a feeling of strength and energy.

The, relatively-speaking, delicately worked hands – given the small size of the figurine – are positioned on the ribcage beneath the breasts with flat fingers and flat palms. The solar plexus, right medial ventral underneath the sternum is a dense network of neuronal structures and a particularly delicate region of the body. In sports, the solar plexus area is known as the 'powerhouse'. The Hohle Fels figurine frames this area with her hands, thus giving it a special focus. The rudimentary legs (obviously they do not play an important informational part) are hip-width apart, and seem to be held straight, a leg position that is either a standing or a relaxed lying position. Their straightness and the deliberate omission of the calves suggest a rather static posture. The upper parts of the thighs are well formed, and the observer may imagine well-developed muscles underneath the surface. If a grown woman plants her legs hip-width apart, she neither displays her genitals nor hides her sex. The usual, unmistakable gestures of sexual offering are legs spread wide apart, or pointing towards or holding the genitals, like in the charming Sheela-na-gig on churches of Celtic-Christian tradition or in Rodin's Iris (see Fig. 6; for comparison).

But that kind of *offerte* is not detected here, although the vulva is visible. No head, strong arms, legs apparently only of interest in their relationship to hips: all indicate a focus centred on the torso. Every body part gives the impression of 'juiciness' and strength: note also the broad shoulders, which are consistent with the strong arms and hands. Put together, the message obtained from that stance reads an open, self-assured, extrovert strong and sensuous body. The figurine communicates strength, joy of life and erotic energy. The missing head is a particularly intriguing feature. Heads are important body parts in iconography. Even with a missing face, the head is diagnostic of the human self. What information is delivered through that deliberate omission? What do we see? A strong, energetically sparkling body with no head. If this figurine was worn as a pendant, the head of the wearer could 'serve' as the image's head as well. Through the asymmetrically positioned loop, the body would hang in a position that would give the impression of a little virtual personality with a cocked head.

Fig 6: *a Sheela-na-gig, Kilpeck Church, Herfordshire (photo: wikicommons); b 'Iris' by Auguste Rodin (© Robert Bayer, Basel; courtesy of fondation beyeler, Switzerland).*

The Gravettian Venuses

The vast majority of the Gravettian figurines depict females. This leaves an open question as to why. Gvozdover gives a dry précis of the Russian approach: "According to many Russian archaeologists these figurines depict the image of a woman-mother, the original mother of all living beings" (Gvozdover 1995, 21).

It is well conceivable that the female form embodied the general idea (Gvozdover 1989, 70) while the variations may be laid down to individual craftsmanship or individual depiction within the context of the canonical rules. Gvozdover (1989, 1995) explicitly refrains from any spiritual conclusions except that the deposition of the figurines, the coloration with ochre and various scratches and cuts intentionally executed on the abdomen of some examples (see Gvozdover 1989, 78 for reference) hint at unknown magical procedures. Lévi-Straus (1962) cautioned against a general eagerness to jump to metaphysical conclusions. The observer's own cultural background exerts great influence on any interpretation. Moreover, one's own cultural background is seldom consciously felt and even less frequently reflected on in a thoroughly critical fashion. The main aim of this investigation is to stay at the gestural basis of emotional expression.

Interpretive discussions concerning the Gravettian ladies generally revolve around the figurines' female sex. The determination of male or female gender is of course of primary interest, but almost invariably the train of argumentation follows from there along the lines of some implicit gender role based on the natural function of childbearing

and motherhood. As a result, the interpretative spectrum is very limited to fertility or an enigmatic matriarchal deity (Gimbutas 1989; Bosinski 1994; Porr 2010). Conkey (1983, 1987) interpreted the 'Venuses' as associated with childbirth and child care. Bosinski interprets the majority of the Gravettian Fat Ladies as pregnant: *"Meist sind eindeutig schwangere Frauen dargestellt"* (Bosinski 1994, 79). We cannot help but dispute this. The overwhelming majority of the 'Venuses' do not seem to be pregnant. In pregnancy the abdominal roundness sits much higher towards the stomach; a pregnant woman has a hard, protruding belly, often without any abdominal fold; the overwhelming majority of these figurines display a heavy abdomen, pointing downwards with a visible abdominal fold that indicates a surplus of subcutaneous fat and flaccid subcutaneous tissue. Only the green figurine from Grimaldi and one limestone fragment from Kostenki (Kostenki I, height 13.5 cm: Bosinski 1994, 81, fig. 66) show a 'pregnant' curvature. The hands rest on the belly, but there are striated bands running around her wrist, joined with a hanging loop (see Fig. 7). This image we can only interpret as ties: the figurine's hands are tied.

A different point of departure with the Venuses is interpreting them as past childbearing age (Neugebauer-Maresch 1995; Oliva 2008) or downright obese (also Nougier 1989, 305; Neugebauer-Maresch 1995; for a criticism see Kunz 1996/²2001, 184-185. Their round forms with heavy pendulous breasts, the folds of subcutaneous fat on the hips, back and thighs, the heavy belly with the dominant abdominal fold are more reminiscent of late maturity than pregnancy.

Childbearing and rearing children is certainly a task of great importance for every human group, but recent archaeological discussion tends towards the equation: female figure = fertility and motherhood (Bosinski 1994; Conard 2009a; Porr 2010), which we feel to be lopsided. A female human body is capable of more functions than being fertile or awaiting fertilisation. If only one aspect of the figurines, their female sex, invariably forms the centre of discussion, other aspects drop out of view and other valuable information may be missed. Only the Western Venus figurines display a vulva in detail, while the abdominal fold of the Venuses of the Kostenki I,1-Avdeevo-Willendorf-culture hides the vulva from view. The display of sexual organs is not necessarily directly related to reproduction. In ancient Rome, for example, phallus sculptures were generally used as lucky charms, and satyrs in Dionysos' train were more inclined to orgiastic events than producing offspring (Henrichs 2008). Moreover, the obvious fatty deposits of the Gravettian Venuses are rather an indication of the opposite of heightened fertility: Overweight or adipose women find it more difficult to conceive and suffer a much higher risk of miscarriage than women with a BMI between 18.50 and 24.99 (Voigt et al. 2008) – apart from the simple fact that obese people often suffer from high blood pressure, arthritis and other adipositas-related diseases. It is but a matter of logic that hunter-gatherers would rather wish for a good state of health while reproducing. McDermott (1996) proposes the Venus figurines of the Gravettian to be self-representations as viewed by the female makers (see also Conkey 1983). Via a series of photographs of pregnant women, he explores the possibility that the proportional distortions which are perceived by the onlooker as advanced obesity, as well as some of the anatomical omissions – namely the lower parts of the legs and the feet – are a result of the maker's own perspective. Through photographical simulation, the subjective point of view of a woman looking down on her body is compared with the image of the respective figurine serving as an

Fig 7: *Fragment of a Venus from Kostenki I; note the rope-like coil around both wrists hanging on the belly (photo: http://donsmaps.com/kostenkivenus.html).*

example, here the Willendorf and Lespugue Venuses (see McDermott 1996, 228, and 240-241, fig. 5 and 6). But intriguing as the proposition is at first, the perspective proves incorrect if tried out.

If our investigational results on the body language of the Willendorf Venus are viewed together within the archaeological context, the conclusion goes against the spectrum of accepted interpretations. We propose a different approach towards the canonized Gravettian Venuses.

The Gravettian Venuses – a ritual context?

The role play used in rituals allows only a very limited range of improvisation. At the same time, ritual is accumulated, 'pooled' knowledge. All rituals bear two characteristics: a strict choreography and closely observed formal rules. This point led scholars to consider the Gravettian Venuses as part of a deeply rooted rite (Gvozdover 1995; Kunz 1996/^{2}2001). There are several elements that suggest ritual. All the 'Venuses' were recovered from living space areas of the sites (Bayer 1930b; Gvozdover 1995). They were deposited alone or in pairs (two or three) with ochre and associated tools in cache-pits (Bayer 1930b; Gvozdover 1989 1995; Neugebauer-Maresch 1995). Most suggestively,

a) they share the same physiological type of a heavy person,

b) all are mature women,

c) all have few items of equivalent adornment,

d) all display the same stance or body language, with only minimal variation. The Gravettian ladies do not stand in a relaxed position; it is a waiting stance displaying an emotional state. All figurines display the same emotional state.

e) Last but not least, the vast majority of the figurines display the same physical omissions: they have no faces and no feet, while one group of figurines has no hands.

In respect to the archaeological context of the Gravettian figurines, the parallels to Gravettian burials throughout are too close to be ignored. Red ochre, mammoth bones (in particular scapulae) and grave goods are regular ingredients of Gravettian burials. Examples include the Krems-Hundssteig twin burial, strewn with red ochre and covered with a mammoth scapula (Händel et al. 2008); the Sungir' burials, also strewn with red ochre and associated with a wealth of personal items (Lavrushin et al. 2000); the famous Dolní Věstonice triple burial (Klíma 1987, 1991), with the peculiar alignment of the buried three adults; or the long-excavated Předmostí burial site (Svoboda 2008). It is noteworthy that as a rule, Gravettian burials were inside the camp, sometimes displayed in the middle of the settlement area in the open air as for example in the Pavlovian sites of Dolní Věstonice and Pavlov (Svoboda 2006). To conclude, we propose that the Gravettian 'Venuses' are likely symbolically and ritually connected to a 'final stage' than to a 'beginning', associated with a 'world beyond the grave'; or they play(ed) some role in mourning rites.

Outlook: The importance of durability: The emergence of the storage medium

Before some concluding remarks concerning the emotive, empathic information contained in our oldest Upper Paleolithic figurines, attention should be drawn to a point important to cultural evolution or behavioral modernity, for that matter. In fact, the oldest Upper Paleolithic figurines signify more than the emergence of intentional art in contrast to 'simple' symboling, which goes back to the African Middle Stone Age (see Henshilwood 2004; Henshilwood and Marean 2006 for a more detailed discussion). Their importance cannot possibly be overstated for our cultural evolution. They also mark the invention of the intentional storage medium. Storage media, in all the variety at our disposal today, allow us to outsource memory, thus transporting valuable information through space and time, independently of the creator. In order to communicate, the informant needs no longer be present. The makers of the figurines deliberately fashioned them out of durable material: ivory, bone, a variety of stones, thus allowing themselves to store and disseminate social, spiritual and emotive information. The scale of disseminating information through a storage medium is different from today, but its principle is set to work for the first time during the early Upper Paleolithic. In a positive feedback loop, our media shape the way we think (McLuhan 1964; McLuhan and Fiore 1967). This is a crucial point in cultural evolution. In one of his Yale lectures, evolutionary biologist St. Stearns (2009) stressed that the emergence of every new medium of intra-species

communication indicates a major transition in biological evolution. In analogy to evolutionary biology, this may equally apply to culture. In any case, this topic requires further investigation, which lies outside the scope of this paper.

Conclusions

The subject of the study presented here has been an investigation into the body language of the world's oldest known figurines. The key question is what and how they tell us something of their origins – not as artifacts but as 'facts of artistic communication'.

When we began to plan the project, we set out on an utterly unknown track. The figurative art of the Swabian Jura is frequently discussed in connection with the development of cognition and the emergence of fully modern behavior. Symbolic artifacts draw our attention because they seem to provide a key towards understanding how we became what we are. The figurines indeed provide a lot of information. The general approach towards the figurines advances from the established concepts of archaeology, concepts which have proved useful up to a certain point. The Aurignacian therianthrops have been interpreted in general terms of shamanism, while the female figurines were mainly associated with 'female' biology in terms of fertility and reproduction. Insights beyond these general statements have been believed to be inaccessible. Investigating into the body language through the methods of performing art is a completely new approach. It has delivered unprecedented results with a promise of future fruitful employment if the limits – and rules – of investigation are strictly observed. A symbiotic employment of models and concepts of evolutionary biology with the empiricism of performing arts may provide a key to 'reading' deeper into the wealth of information contained within the figurines. Despite the theoretical affirmation of having a highly developed and well-tuned communication system as a species, despite the rational knowledge of being biocultural beings that naturally respond to culturally induced impulses, some of the results came as a complete surprise. The consistency of the responses in both actor groups points indeed to some universal elements in human communication on the physical level. In the case of the Aurignacian figurines they point towards a common extrovert, explorative attitude. The dynamics of their gestural or motor repertoire is a clear statement with all the figurines of the Swabian Jura and Stratzing. The Aurignacian figurines stand at the very beginning of cultural modernity. They convey a fundamentally different life feeling than the Gravettian 'Ladies'. The latter form a canonized, 'uniform' group that bear all the signs of symbolic and social complexity. Here again, the consistency of the participants' responses was astounding. The emotional 'content' of the Willendorf Venus was the unmeditated surprise. The introvert, static, melancholic attitude suggests a different symbolic meaning than the 'mainstream interpretation' that concentrates too much on the 'typical female' topics of fertility and motherhood. In recent years, disciplines like neurosciences and evolutionary biology have advanced a series of theoretical models that provide the right framework for a 'process' of understanding by taking a look at things from many angles. It is this possibility of shifting and combining different points of view on a thing – Adorno termed it thinking in constellations – that may provide valuable clues as to the meaning of such complex artifacts as the Upper Paleolithic figurines. The process of investigating the anthropomorphic figurines applied here is simply the most basic way of learning by trying 'to take a look inside'. It is learning through the unique

basic human way of imitation (Rizzolatti and Craighero 2004; Bauer 2005). These results in particular highlight the demand of future, improved investigation into the nature of human body language in general, and into a closer scrutiny of what these first figurines 'have to tell'. Their small size offers some humorous irony, considering their significance in the development of modern cognition.

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